EXHIBIT A

AMENDED PATENT RULE 4-5(d) JOINT CLAIM CONSTRUCTION CHART

Entropic Communications, LLC, v. Charter Communications, Inc., Case No. 2:22-cv-00125-JRG

U.S. PATENT NO. 8,223,775

Term (claim(s))	Plaintiff's Proposed Construction	Defendant's Proposed Construction	Court's Construction
Claim 18 A cable modem system comprising: **a data networking engine implemented in a first circuit that includes at least one processor**, the data networking engine programmed with software that when executed by the at least one processor of the first circuit causes the data networking engine to perform home networking functions including interfacing with customer provided equipment; **a cable modem engine implemented in a second circuit that includes at least one processor, the second circuit being separate from**	**"a data networking engine implemented in a first circuit that includes at least one processor. . ."** Plain and ordinary meaning. No construction necessary. **"a cable modem engine implemented in a second circuit that includes at least one processor, the second circuit being separate from the first circuit…"** Plain and ordinary meaning. No construction necessary. **"DOCSIS controller"** Plain and ordinary meaning. No construction necessary.	**"a data networking engine implemented in a first circuit that includes at least one processor. . ."** Indefinite. **"a cable modem engine implemented in a second circuit that includes at least one processor, the second circuit being separate from the first circuit. . ."** Indefinite. **"DOCSIS controller"** "DOCSIS controller" is the DOCSIS controller as described in the patent	**"a data networking engine implemented in a first circuit that includes at least one processor. . ."** **"a cable modem engine implemented in a second circuit that includes at least one processor, the second circuit being separate from the first circuit. . ."** **"DOCSIS controller"**

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the first circuit, the cable modem engine programmed with software that when executed by the at least one processor of the second circuit causes the cable modem engine to perform cable modem functions other than the home networking functions performed by the data networking engine, the cable modem functions including interfacing with cable media, and the cable modem engine configured to enable upgrades to its software in a manner that is independent of upgrades to the software of the data networking engine, the cable modem engine including a **DOCSIS controller** and a **DOCSIS MAC processor**, the DOCSIS MAC processor configured to process downstream PDU packets and forward the processed packets directly to the data networking engine without the involvement of the DOCSIS controller in order to boost downstream throughput; and		specification (*see, e.g.*, '775 Patent at 3:21-48; 4:41-57; *id.* at FIGs. 1 & 2). Otherwise indefinite.	
	"DOCSIS MAC processor" Plain and ordinary meaning. No construction necessary.	**"DOCSIS MAC processor"** "DOCSIS MAC processor" is the DOCSIS MAC processor as described in the patent specification (*see, e.g.*, '775 Patent at 3:1-20; 4:41-57; *id.* at FIGs. 1 & 2). Otherwise indefinite.	**"DOCSIS MAC processor"**
	"data bus" Plain and ordinary meaning. No construction necessary.	**"data bus"** Indefinite.	**"data bus"**
	"wherein the cable modem functions performed by the cable modem engine are completely partitioned from the home networking functions performed by the data networking engine"	**"wherein the cable modem functions performed by the cable modem engine are completely partitioned from the home networking functions performed by the data networking engine"**	**"wherein the cable modem functions performed by the cable modem engine are completely partitioned from the home networking functions performed by the data networking engine"**

Term (claim(s))	Plaintiff's Proposed Construction	Defendant's Proposed Construction	Court's Construction
a **data bus** that connects the data networking engine to the cable modem engine, **wherein the cable modem functions performed by the cable modem engine are completely partitioned from the home networking functions performed by the data networking engine**.	Plain and ordinary meaning. No construction necessary.	The cable modem engine and the data networking engine do not share any connecting circuitry, data paths, or memory devices.	
Claim 19 A cable modem system as claimed in claim 18, wherein all **DOCSIS functions** are localized in the cable modem engine.	**"DOCSIS functions"** Plain and ordinary meaning. No construction necessary.	**"DOCSIS functions"** This limitation does not change the scope of claim 18.	**"DOCSIS functions"**

U.S. PATENT NO. 8,792,008

Term (claim(s))	Plaintiff's Proposed Construction	Defendant's Proposed Construction	Court's Construction
Claim 1 A system comprising: an analog-to-digital converter **operable to digitize a received signal spanning an entire television spectrum**	**"operable to"** **[AGREED]** **"digitize a received signal spanning an entire television spectrum comprising a**	**"operable to"** **[AGREED]** **"digitize a received signal spanning an entire television spectrum comprising a**	**"operable to"** Configured to. **"digitize a received signal spanning an entire television spectrum comprising a**

Term (claim(s))	Plaintiff's Proposed Construction	Defendant's Proposed Construction	Court's Construction
comprising a plurality of television channels, said digitization resulting in a digitized signal; a **signal monitor operable to**: analyze said digitized signal to determine a characteristic of said digitized signal; and report said determined characteristic to a source of said received signal; a **data processor operable to** process a television channel to recover content carried on the television channel; and a **channelizer operable to**: select a first portion of said digitized signal; select a second portion of said digitized signal; and concurrently output said first portion of said digitized signal to said **signal monitor** and	**plurality of television channels"** Plain and ordinary meaning. No construction necessary. **"signal monitor"** **"data processor"** **"channelizer"** Plain and ordinary meaning. No construction necessary.	**plurality of television channels"** The "received signal" contains only television channels. **"signal monitor"** **"data processor"** **"channelizer"** Three separate pieces of hardware, configured to perform the functions the claim ascribes to the signal monitor, data processor, and channelizer, respectively.	**plurality of television channels"** **"signal monitor"** **"data processor"** **"channelizer"**

Term (claim(s))	Plaintiff's Proposed Construction	Defendant's Proposed Construction	Court's Construction
said second portion of said digitized signal to said **data processor**.			

U.S. PATENT NO. 9,825,826

Term (claim(s))	Plaintiff's Proposed Construction	Defendant's Proposed Construction	Court's Construction
Claim 1 A method comprising: performing by one or more circuits of a receiver coupled to a television and data service provider headend via a hybrid fiber coaxial (HFC) network: receiving, via said HFC network, a signal that carries a plurality of channels, wherein said channels comprise one or both of television channels and data channels; digitizing said received signal to generate a digitized signal;	**"network management messages"** Plain and ordinary meaning. No construction necessary.	**"network management messages"** Messages which report on the status of the network based on an analysis of the measured characteristic.	**"network management messages"**

Term (claim(s))	Plaintiff's Proposed Construction	Defendant's Proposed Construction	Court's Construction
selecting a first portion of said digitized signal; selecting a second portion of said digitized signal; processing said selected second portion of said digitized signal to recover information carried in said plurality of channels; analyzing said selected first portion of said digitized signal to measure a characteristic of said received signal; and controlling the transmission of **network management messages** back to said headend based on said measured characteristic of said received signal, wherein said measured characteristic is different than said network management messages.			

U.S. PATENT NO. 8,284,690

Term (claim(s))	Plaintiff's Proposed Construction	Defendant's Proposed Construction	Court's Construction
Claim 1 A method comprising: a) receiving in a first node, a **probe request** specifying a first plurality of parameters associated with the generation and transmission of a **probe**, wherein the first plurality of parameters at least specify content payload of the **probe** and a second node; b) determining a second plurality of parameters associated with generation and transmission of the **probe**; c) **generating the probe in accordance with the first plurality of parameters and the second plurality of parameters, wherein the probe has a form dictated by the first plurality of parameters**; and	**"probe"** Plain and ordinary meaning. No construction necessary **"probe request"** Plain and ordinary meaning. No construction necessary. **"generating the probe in accordance with the first plurality of parameters and**	**"probe"** A "probe" is a packet transmitted to a network node which the node compares to a reference packet having a known form in order to determine characteristics of the channel on which the packet was transmitted. **"probe request"** A request sent by a first network node to a second network node which defines the form of a probe to be generated and transmitted by the second network node. The probe request specifies at least the content payload of the probe. **"generating the probe in accordance with the first plurality of parameters and**	**"probe"** **"probe request"** **"generating the probe in accordance with the first plurality of parameters and**

Term (claim(s))	Plaintiff's Proposed Construction	Defendant's Proposed Construction	Court's Construction
d) transmitting the **probe** from the first node to the second node.	**the second plurality of parameters, wherein the probe has a form dictated by the first plurality of parameters"** Plain and ordinary meaning. No construction necessary.	**the second plurality of parameters, wherein the probe has a form dictated by the first plurality of parameters"** Indefinite.	**the second plurality of parameters, wherein the probe has a form dictated by the first plurality of parameters"**
Claim 7 The method of claim 1, wherein the **probe request** requests a **probe** that assists in diagnosing a network problem.	**"probe"** Plain and ordinary meaning. No construction necessary. **"probe request"** Plain and ordinary meaning. No construction necessary.	**"probe"** A "probe" is a packet transmitted to a network node which the node compares to a reference packet having a known form in order to determine characteristics of the channel on which the packet was transmitted. **"probe request"** A request sent by a first network node to a second network node which defines the form of a probe to be generated and transmitted by the second network node. The probe request specifies at least the content	**"probe"** **"probe request"**

Term (claim(s))	Plaintiff's Proposed Construction	Defendant's Proposed Construction	Court's Construction
		payload of the probe.	
Claim 8 The method of claim 7, wherein the **probe request** is generated by a network operator and uploaded to the second node.	**"probe request"** Plain and ordinary meaning. No construction necessary.	**"probe request"** A request sent by a first network node to a second network node which defines the form of a probe to be generated and transmitted by the second network node. The probe request specifies at least the content payload of the probe.	**"probe request"**
Claim 9 A method comprising: a) a first node transmitting a **probe request** to a second node, the **probe request** specifying a first plurality of probe parameters for a **physical layer probe**, **the first plurality of probe parameters comprising a form for the probe including a modulation profile for the probe**;	**"probe"** Plain and ordinary meaning. No construction necessary. **"physical layer probe"** Plain and ordinary meaning. No construction necessary.	**"probe"** A "probe" is a packet transmitted to a network node which the node compares to a reference packet having a known form in order to determine characteristics of the channel on which the packet was transmitted. **"physical layer probe"** "Physical layer probe" means probe. Otherwise indefinite.	**"probe"** **"physical layer probe"**

Term (claim(s))	Plaintiff's Proposed Construction	Defendant's Proposed Construction	Court's Construction
b) the first node receiving the **probe** from the second node, **wherein the probe is generated in accordance with the first plurality of parameters and in accordance with a second plurality of parameters determined by the second node**.	**"probe request"** Plain and ordinary meaning. No construction necessary.	**"probe request"** A request sent by a first network node to a second network node which defines the form of a probe to be generated and transmitted by the second network node. The probe request specifies at least the content payload of the probe.	**"probe request"**
	"the first plurality of probe parameters comprising a form for the probe including a modulation profile for the probe" Plain and ordinary meaning. No construction necessary.	**"the first plurality of probe parameters comprising a form for the probe including a modulation profile for the probe"** Indefinite.	**"the first plurality of probe parameters comprising a form for the probe including a modulation profile for the probe"**
	"wherein the probe is generated in accordance with the first plurality of parameters and in accordance with a second plurality of parameters	**"wherein the probe is generated in accordance with the first plurality of parameters and in accordance with a second plurality of parameters**	**"wherein the probe is generated in accordance with the first plurality of parameters and in accordance with a second plurality of parameters**

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	determined by the second node" Plain and ordinary meaning. No construction necessary.	**determined by the second node"** Indefinite.	**determined by the second node"**
Claim 11 The method of claim 9, further comprising: a) the first node transmitting a second **probe request** to a third node; b) and the first node receiving a second **probe** from the third node, wherein the second **probe** is generated according to the second **probe request**; and wherein the first **probe** and second **probe** are transmitted simultaneously using OFDMA.	**"probe"** Plain and ordinary meaning. No construction necessary. **"probe request"** Plain and ordinary meaning. No construction necessary.	**"probe"** A "probe" is a packet transmitted to a network node which the node compares to a reference packet having a known form in order to determine characteristics of the channel on which the packet was transmitted. **"probe request"** A request sent by a first network node to a second network node which defines the form of a probe to be generated and transmitted by the second network node. The probe request specifies at least the content payload of the probe.	**"probe"** **"probe request"**
Claim 15	**"probe request"**	**"probe request"**	**"probe request"**

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The method of claim 9, wherein the **probe request** is configured to diagnose a network problem.	Plain and ordinary meaning. No construction necessary.	A request sent by a first network node to a second network node which defines the form of a probe to be generated and transmitted by the second network node. The probe request specifies at least the content payload of the probe.	
Claim 16 The method of claim 15, wherein the **probe request** is generated by a network operator and uploaded to the first node.	**"probe request"** Plain and ordinary meaning. No construction necessary.	**"probe request"** A request sent by a first network node to a second network node which defines the form of a probe to be generated and transmitted by the second network node. The probe request specifies at least the content payload of the probe.	**"probe request"**

U.S. PATENT NO. 9,210,362

Term (claim(s))	Plaintiff's Proposed Construction	Defendant's Proposed Construction	Court's Construction
Claim 11 A method comprising:	**order of the steps**	**order of the steps**	**order of the steps**

Term (claim(s))	Plaintiff's Proposed Construction	Defendant's Proposed Construction	Court's Construction
in a wideband receiver system: **downconverting, by a mixer module of said wideband receiver system, a plurality of frequencies** that comprises a plurality of desired television channels and a plurality of undesired television channels; digitizing, by a wideband analog-to-digital converter (ADC) module of said wideband receiver system, said plurality of frequencies comprising said plurality of desired television channels and said plurality of undesired television channels; selecting, by digital circuitry of said wideband receiver system, said plurality of desired television channels from said digitized plurality of frequencies; and	Claimed steps do not have to be performed in the order recited in the claim. **"downconverting … a plurality of frequencies"** Plain and ordinary meaning. No construction necessary	Claimed steps must be performed in the order recited in the claim. **"downconverting … a plurality of frequencies"** Downconverting a plurality of frequencies of an analog radio frequency (RF) signal.	**"downconverting … a plurality of frequencies"**

Term (claim(s))	Plaintiff's Proposed Construction	Defendant's Proposed Construction	Court's Construction
outputting, by said digital circuitry of said wideband receiver system, said selected plurality of television channels to a demodulator as a digital datastream.			

U.S. PATENT NO. 10,135,682

Term (claim(s))	Plaintiff's Proposed Construction	Defendant's Proposed Construction	Court's Construction
Claim 1 A method comprising: determining, by a cable modem termination system (CMTS), for each cable modem served by said CMTS, a corresponding signal-to-noise ratio (SNR) related metric; assigning, by said CMTS, each cable modem among a plurality of **service groups** based on a respective corresponding SNR-related metric; generating, by said CMTS for each one of said plurality of **service groups**, **a composite**	**"a composite SNR-related metric based at least in part on a worst-case SNR profile of said SNR-related metrics"** Plain and ordinary meaning. No construction necessary. **"service group[s]"** Plain and ordinary meaning. No construction necessary. **"[communicating with/corresponding to]**	**"a composite SNR-related metric based at least in part on a worst-case SNR profile of said SNR-related metrics"** Indefinite. **"service group[s]"** A "service group" is the complete set of downstream and upstream channels within a single CMTS that a single cable modem could potentially receive or transmit on. **"[communicating with/corresponding to]**	**"a composite SNR-related metric based at least in part on a worst-case SNR profile of said SNR-related metrics"** **"service group[s]"** **"[communicating with/corresponding to]**

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SNR-related metric based at least in part on a worst-case SNR profile of said SNR-related metrics corresponding to said one of said plurality of service groups; selecting, by said CMTS, one or more physical layer communication parameter to be used for **communicating with said one of said plurality of service groups** based on said composite SNR-related metric; and communicating, by said CMTS, with one or more cable modems **corresponding to said one of said plurality of service groups** using said selected one or more physical layer communication parameter.	**said one of said plurality of service groups"** Plain and ordinary meaning. No construction necessary.	**said one of said plurality of service groups"** Indefinite.	**said one of said plurality of service groups"**